

# UNMANNED VESSELS

THE LEGAL PERSPECTIVE

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# Unmanned vessels - Maritime Autonomous Surface Ship (MASS)



Unmanned vessel - A ship which navigates the globe with no one at the helm.

Small autonomous vessels such as work boats, survey vessels, ferries, coastal voyage vessels, etc. have been tested by the USA, Scandinavian and Far East countries, and these vessels are already plying in navigable waters.

Technological developments for larger autonomous vessels (controlled remotely or fully autonomous) in trans-oceanic voyages is rapidly underway.

However, there are no international standards yet for safe design, operation or maintenance of MASS vessels.

# MASS and the IMO

The IMO's Maritime Safety Committee (MSC) completed their RSE (Regulatory Scoping Exercise) in May 2021, assessing the implications of MASS on the existing regulatory framework of other maritime conventions (notably SOLAS, STCW, MARPOL, COLREGS). In mid-2022, MSC commenced work on a draft MASS Code.

The MASS Code is expected to be in conjunction with the provisions of other high priority technical codes (SOLAS, COLREG, STCW, FSS, IMDG, IBC, IGC, Tonnage Codes).

It is envisaged that initially the MASS Code would be implemented by way of a goal based approach and as a non-mandatory Code subject to the adoption of the Code (expected in 2024).

IMO expects a mandatory MASS Code to enter into force on 01 January 2028, based on the experiences gained from the application of the non-mandatory MASS Code.

# MASS – THE LEGAL PERSPECTIVE



MASS vessels are operated by Remote Control Centers (RCCs).

Present laws provide for qualifications and training of seafarers for manned vessels, and the chain of command of crew. Most laws refer to the duties of a “Master” of a vessel.

The present laws (not only for ships, but also ports, pilotage, salvage, etc) are silent about RCCs, the qualifications/training of RCC personnel and the chain of command and the safety management systems to be in place. Therefore, the present laws are difficult and sometimes impossible to apply to MASS vessels.

Liability Regimes - The liability and fault under the present laws (eg. COLREGs, Hague/HV/Rotterdam Rules, LLMC Conventions, etc) generally relate to Ship Operator, Master and crew. The position of RCCs is less clear in these laws.

The Right of Arrest of MASS vessels – It is not clear whether such right would arise when the operations of a ship are not by owner/crew but delegated to a third party (RCC).

Criminal Jurisdiction – Generally, offences by Master and crew are based on the principle of laws of territory in which offences are commissioned. Where an RCC is based in a different jurisdiction, the conflict of laws can be complex.

The national/international laws, rules and safety regulations need to be amended to accommodate the safe use of such vessels in navigable waters.

# MASS and COLREGS

The most significant implications of MASS to enable safe operation is with regard to COLREGS.

COLREGS (Rule 3(a)) defines a vessel to include, 'every description of watercraft.....used or capable of being used as a means of transportation on water'.

COLREGS applies to 'all vessels on the high seas' and 'in waters navigable by seagoing vessels'. Plainly speaking, COLREGS applies to MASS.

With Mass vessels, there can be potential liability attributable

The RCC  
The Persons maintaining the control equipment  
Product liability – (a) negligence based liability (b) strict liability

The above are not contained in COLREGS and thus requires a need to address liability for – (i) vessels operating remotely and (i) fully autonomous.

MASS and manned vessels will interact regularly and thus IMO identified the need to have a legal framework of COLREGS to govern MASS vessels' interaction and coexistence with manned ships.

# MASS and UNCLOS

UNCLOS is considered as a framework convention which provides general guidance to Member States as to the law of the seas.

While UNCLOS contains provisions for various IMO instruments/Codes to be implemented by Member States, however such implementation is left to the discretion of the States as against a mandatory compliance.


The provisions of UNCLOS with regard to safety of ships are more relevant to conventional ships which are manned.

For example, Master is required to render assistance to persons in distress at sea. There is uncertainty as to who a MASS vessel will render such assistance.

Conventional ships are expected to have documentation which is physically kept onboard. The requirements for Flag States/Port State to amend their regulations to make available digitally issued documentation is not a standard norm.

A larger review of UNCLOS vis-à-vis MASS is required in the longer run.

# MASS and MARINE INSURANCE



While technical and regulatory frameworks are one dimension, a different issue is to what extent such MASS vessels are insurable within the current parameters of insurance law and market practice.

The warranty of 'Seaworthiness' in marine insurance laws also includes that the ship is properly manned, which extends to the competence of crew onboard.

In case of MASS vessels, it requires to be seen how an autonomous software navigating the ship (digital master) be considered competent and how liability is to be attributed to error of such software and the people behind it.

Cyber Risks/Attacks – the consequence of these risks/attacks to the vessel, business loss, confidential data, etc. require insurance laws to be revisited.

Flag States and Class are required to bring rules/regulations to be adopted as best practices to minimize cyber risks.

The global autonomous ships market size is estimated to be valued at US\$88 billion in 2020, and is projected to reach US\$135 billion by 2030.

New insurance products and laws are required to be developed for MASS vessels, considering the new risks associated with these vessels.



# Thank you

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